A RUBBER COMPOSITION FOR TIRE TREADS AND A PNEUMATIC TIRE HAVING A TREAD MADE OF SUCH COMPOSITION

BACKGROUND OF THE INVENTION

The present invention relates to a rubber composition for tire treads and a pneumatic tire having a tread made of the rubber composition, and particularly relates to a rubber composition for tire treads significantly improving tires in grip performance on wet road with remaining low fuel consumption of automobiles and a pneumatic tire having a tread made of the rubber composition.

In recent years, tires for automobiles have required performances, such as the controllability in driving, abrasion resistance, riding comfort as well as the low fuel consumption. Steps taken to achieve such performances include improving braking and driving on wet roads at high driving speed, improving controllability in driving by increasing the grip force on road surfaces, increasing cornering performance by increasing the block stiffness of the tire tread pattern to inhibit the tire from block deformation at cornering, and inhibiting hydroplaining from occurring by inhibiting groove parts on tire tread from deforming to achieve smooth draining. Recently, to satisfy these requirements, tires having an increased grip performance on wet road surface are provided by using rubber compositions obtained by mixing silica with SBR of a high styrene unit content for tire treads.

However, although the rubber compositions for tire treads mentioned above provide an increased grip force at a low temperature range of at most 15°C of road surface, they do not provide a sufficient grip force on wet or semi-wet road surface. Rubber compositions containing silica decrease in stiffness and decrease significantly in grip